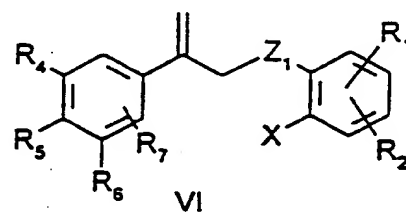
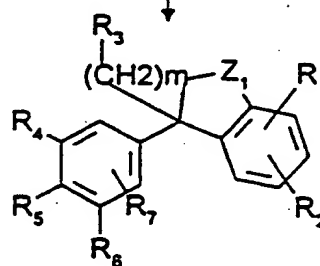


Phosphine or  
phosphonate  
Base



Metal catalyst,  
electrophile

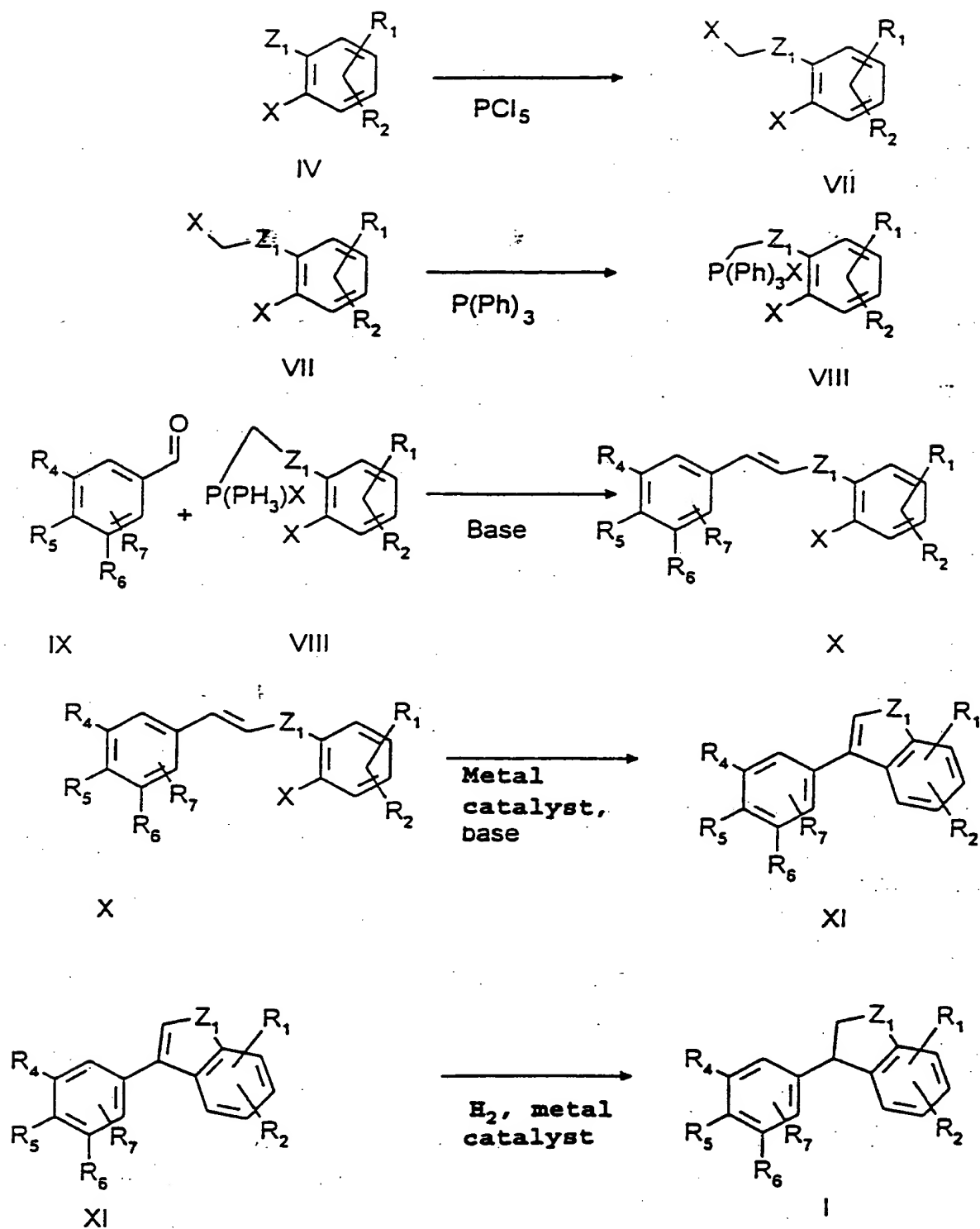


X: halogen

Z<sub>1</sub>: hetero atom

FIGURE 1

2/2



X: halogen  
Z<sub>1</sub>: hetero atom

FIGURE 2